ENGLISH VERSION

INSTRUCTION MANUAL

Reciprocating coder

T.C. 24 x 24 ISO
T.C. 24 x 35 ISO
T.C. 24 x 48 ISO
T.C. 37 x 37 ISO

TIFLEX

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You have just acquired a TIFLEX appliance and we thank you for your confidence.

We hope that this item of equipment will give you the greatest satisfaction and, in order to achieve the best results, you are advised to follow carefully the user instructions set out in this manual.

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1. Introduction

T.C. pneumatic printers are reciprocating units to be integrated on automatic packaging lines. They are designed to operate at very low pressure, allowing the item to be touched extremely lightly. They are essentially intended for dating, coding, referencing, batch numbering and price printing on absorbent and non-absorbent substrates on continuous or intermittent run or at a manual station.

Constructed of stainless steel elements, these printers are of "foodstuff" quality.

2. Description

2.1 The basic mechanical device consists of the following:

- the TC head
- two type holders

As an option, it can be supplemented with the following:
- 1 fastening bracket
- 1 device to lock the item (linked to the CBM 401 or 402 control box, cf. § 6).

2.2 The control device groups together the following:

- the pneumatic or electro-pneumatic control box
- the pneumatic or electric trigger.

2.3 The inking device consists of a cartridge designed for rapid drying printing.

N.B.: The T.C. printing head also exists as an independent bench station for top printing.

2.4 Operating principle

A trigger detects the passage of the item to be printed. It forwards this information to the control box, which controls the printing head.

At the end of the head, a type holder deposits the print on the item, and it then resumes its rest position, thereby covering the opening of the inking cartridge and preventing the inker from drying out.

2.5 Characteristics

- 3 maximum printing formats: 24 x 24 mm, 24 x 35 mm, 24 x 48 mm,37x37mm
- overall dimensions of the head (including cartridge and jack)

  formats 24 x 24 and 24 x 35 mm : H = 205 mm ; L = 165 mm ; W = 80 mm

  format 24 x 48 mm and 24 x 35 mm: H = 205 mm ; L = 181 mm ; W = 95 mm.

The T.C. head is controlled by means of all the existing pneumatic or electrical control boxes.

2.6 Selection table of the different units

	T.C./T201	T.C./T202	T.C./CBM401	T.C./CBM402
Conveyor operation	stepped	Stepped	continuous	continuous
Permissible rate	120 strokes/min	150 strokes/min	60 strokes/min	60 strokes/min
Triggers	- with roller sensitive at 2.3 to 4.5 kg - with rod sensitive at 100 g - with pedal	- photoelectric cell - electric pedal	- with roller sensitive at 2.3 to 4.5 kg - with rod sensitive at 100 g - with pedal	- photoelectric cell - electric pedal - PLC - hard contact
Control of 2 heads simultaneously	yes	yes	yes	yes
Minimum pressure compressed air supply network	4 bars	4 bars	6 bars	6 bars
Option			Pulse delay	Pulse delay

2.7 Use of printhead, witrout control box

- Max cylinder pressuve : 2 bars (a higher atmospheric pressuve will damage the cylinder or the valve - stem)
- Control the piston movement by adjusting the pressure restrictor .

IMPORTANT : On this installation type TIFLEX can't give any garanty, as we have got no certainty, that the TC has been installed and comissioned correctly .

3. Installation

3.1 Fitting the printing head

3 possibilities for fitting the head:
- fitting by your own means
- using a xyz bracket in one of its 3 versions
- the head fitting kit.

Comments on fitting the head

It can be adjusted in every direction.

It must be fixed at a specific distance in relation to the surface to be printed (see overall dimensions, fig. A).

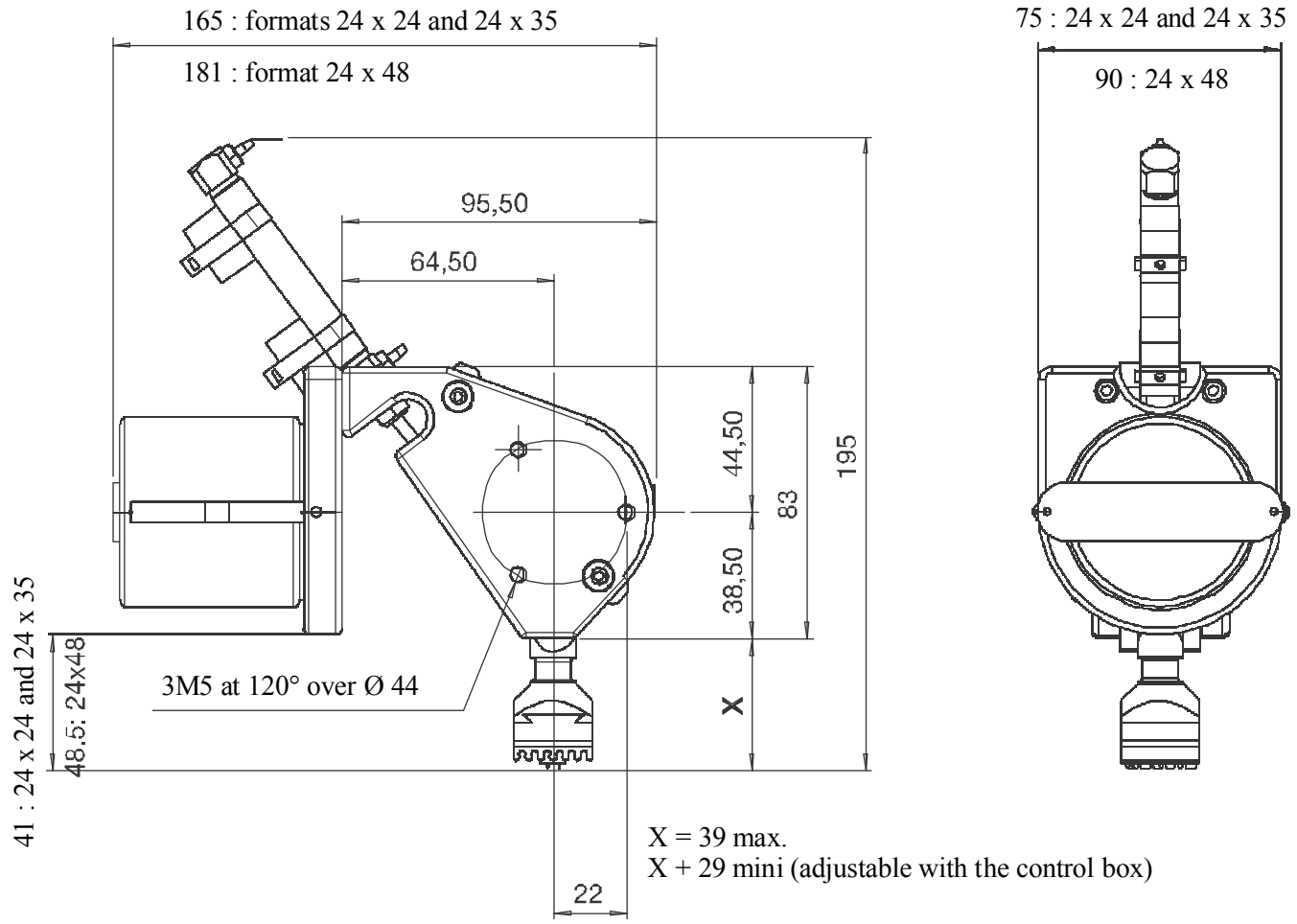
The xyz bracket allows precise positioning of the head by means of micrometer endless screws. It also allows adjustment of the point of impact on the surface to be printed, by setting the position of the head in site and inclination.

If you have opted for a mounting system designed by you, it is recommended that you envisage one that can be adjusted in distance.

In every situation, the precision of the mounting of the head will determine the perfection of the printing.

Under the action of a double-effect jack, the movement lies within a 90° curve with a linear limit stop over 7 mm, both towards the item to be printed and towards the inking surface.

These two linear limit stops are controlled by adjusting the flow limiters situated on the control box, so that the movement does not end with a mechanical impact at the ends of the guide grooves.



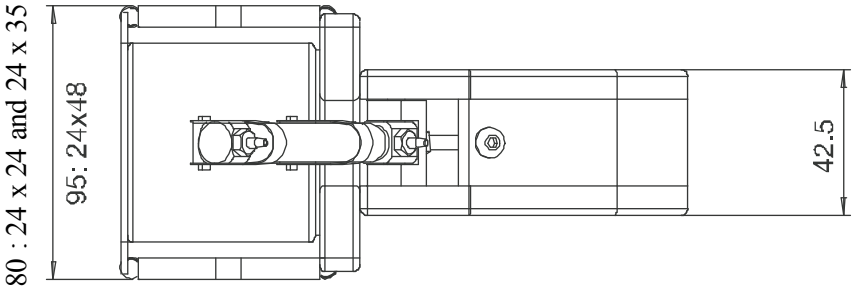


Fig. A

3.2 xyz bracket

The xyz brackets allow precise positioning of the **T.C.** printing heads.

1) Installation

These brackets exist in 3 versions :

a) xyz, micrometric, fastening along a horizontal or vertical plane (fig. 1), more particularly recommended when the items to be printed are handled manually.

b) xyz, micrometric and articulated, fastening along a vertical plane (fig. 2), for installation at the edge of a conveyor.

c) bench model fastening along a horizontal plane (fig. 3) without micrometric adjustments.

For all these versions, the base [1] is secured by means of four M6 screws (fig. 1, 2, 3).

2) Mounting the printing head

The head is secured to the plate [2] by means of three M5 screws (see fig. 1, 2, 3).

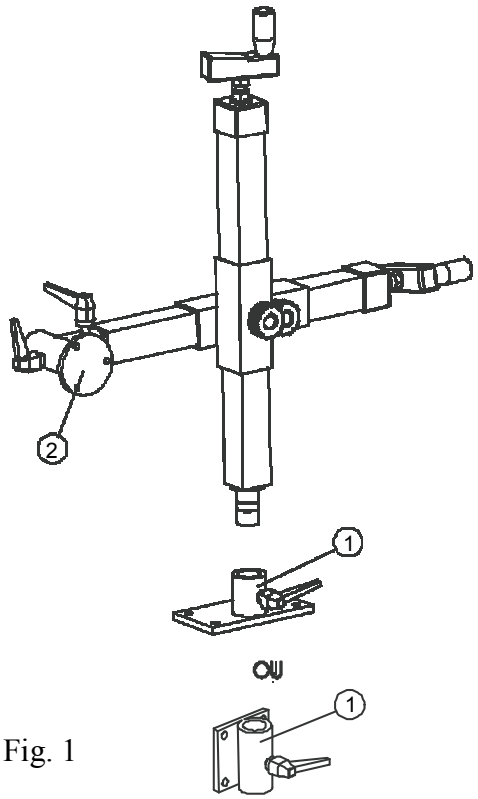


Fig. 1

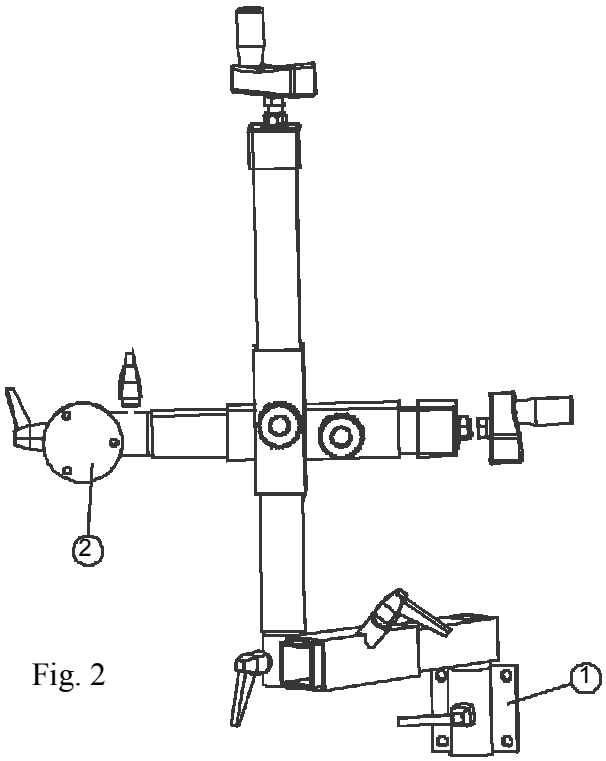


Fig. 2

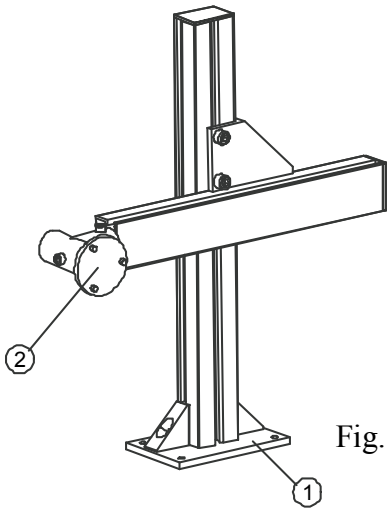


Fig. 3

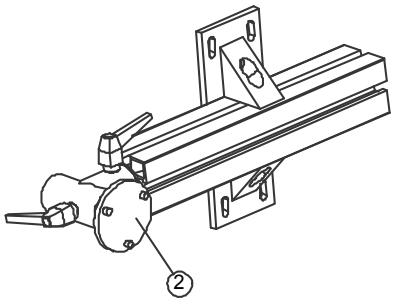


Fig. 4

3) Adjustments

For these 3 versions, adjustment is possible along x, y, z.

z designates the rotation of the vertical axis (locking screw [3]) (fig. 4).

y designates the movement in a straight line along the vertical plane (micrometric adjustment [4], locking screw [5]) (fig. 4).

x designates the movement in a straight line along the horizontal plane (micrometric adjustment [6], locking screw [7]) (fig. 4).

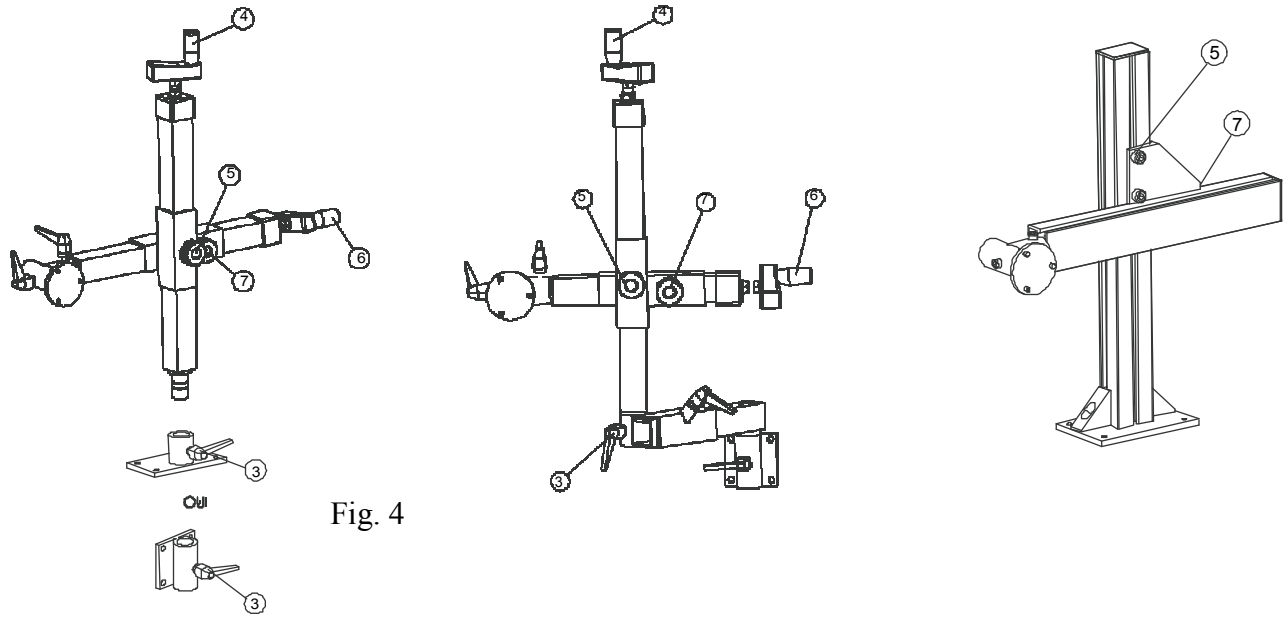


Fig. 4

For the 2 versions with horizontal and vertical fastening, a bi-directional ball joint makes it possible to tilt the head in site (locking screw [8]) and in inclination (locking screw [9]), (fig. 5).

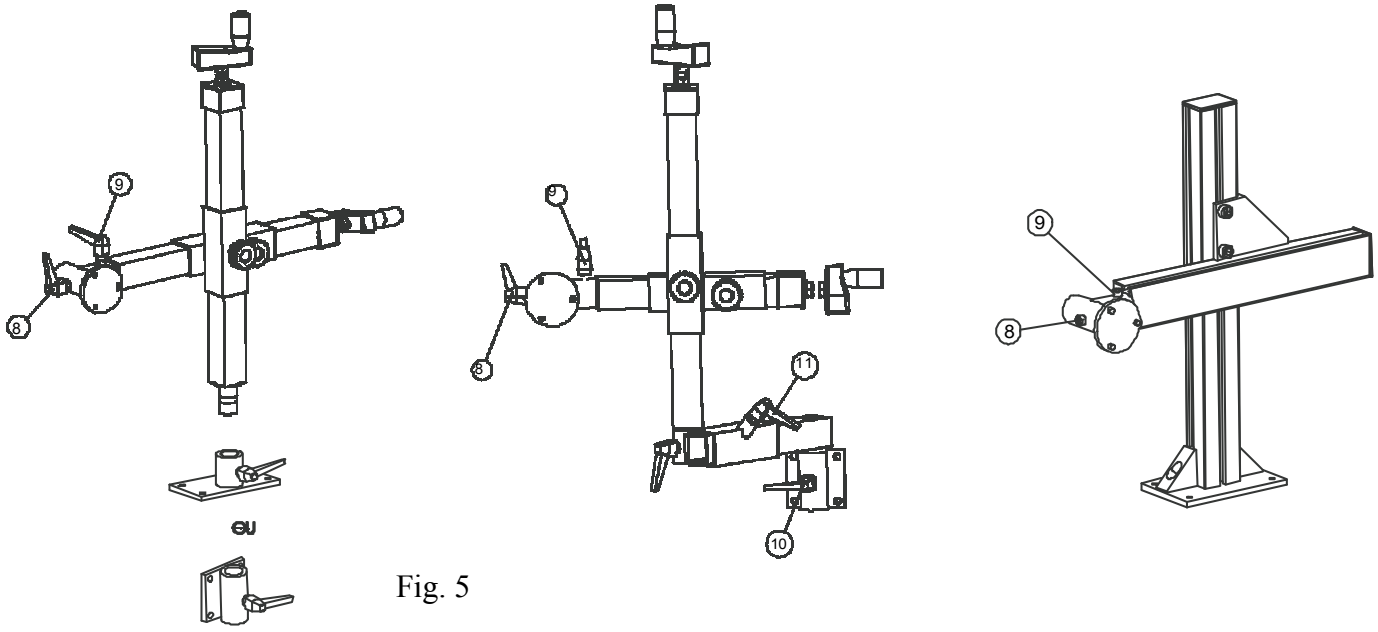


Fig. 5

For the vertical fastening version, 2 adjustments are still possible:

1) rotation of the unit around a vertical axis (locking screw [10])
2) distancing the unit in relation to the conveyor (locking screw [11]), (fig. 5)

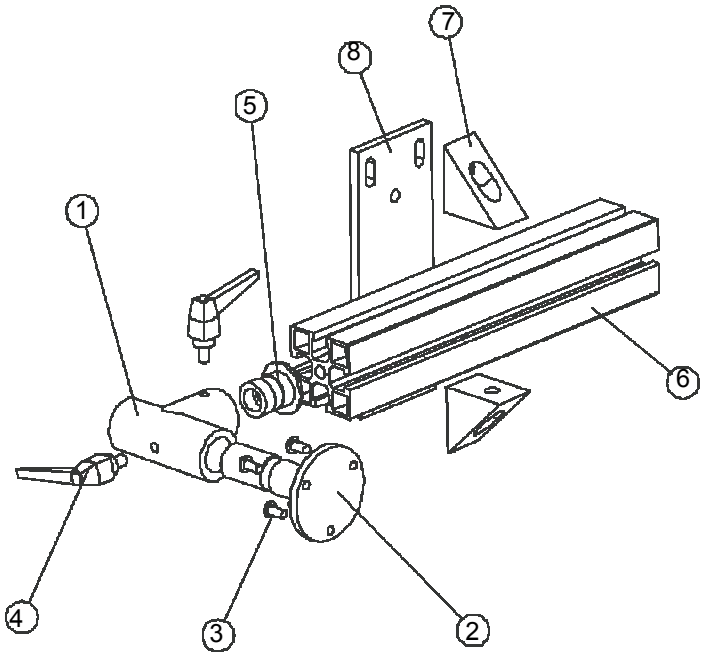
Prior to each adjustment, it is essential to undo the corresponding locking screw.

These screws have an indexable handle; simply lift these handles slightly in order to allow easy handling.

A 100 mm extension piece is available by special order, to increase the capacities of these brackets.

3.3 Head fitting kit

The fitting kit consists of 9 main parts + fastening accessories.

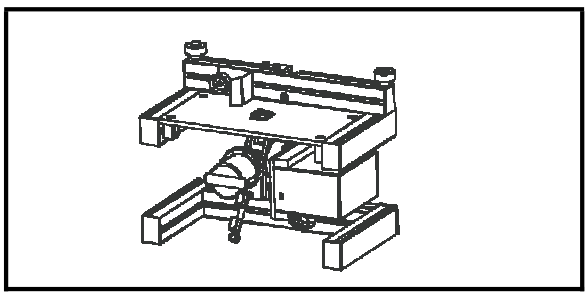


- a fastening part for the TC head, item (2), and the fastening accessories, item (3).
- a connector, allowing rotation is 2 directions, item (1), + 2 disengageable locking handles, item (4)
- an connector/aluminium sectional bar connecting pin, rep. (5)
- a 45 x 45 aluminium sectional bar, item (6), 250 mm long
- a plate, item (8), and 2 angle cleats, item (7), for vertical and horizontal positioning

3.4 Bench unit

• T.C. head bench unit "bottom mounted"

Aluminium sectional bar unit comprising a T.C. printing head, a T202 electrical control box, an electric trigger, a device for adjusting the position of the item.



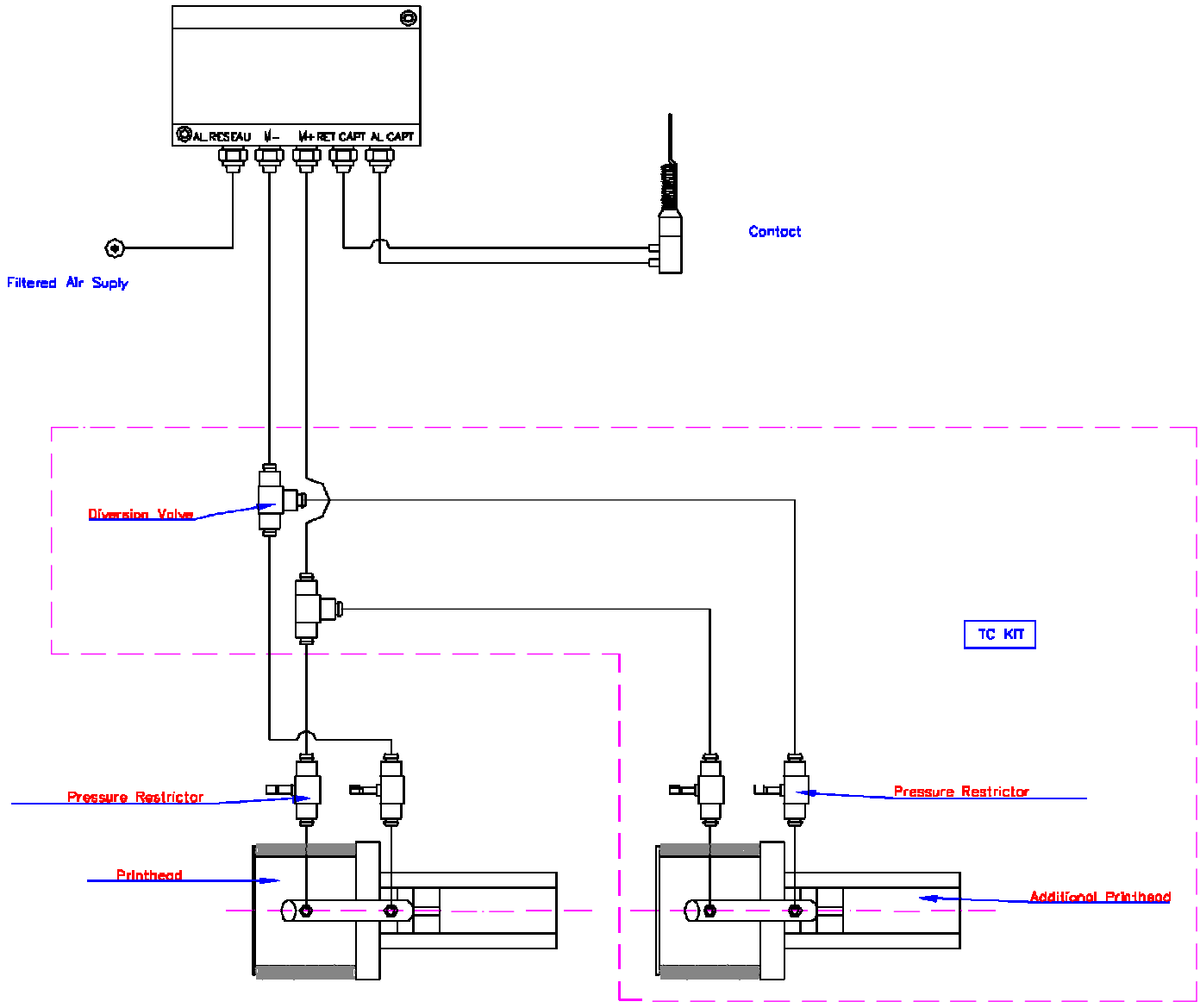
3.5 Kit for additional TC printhead

This Kit is forseen for adding an extra TC printhead.

It include an extra printhead and 2 diversion valves and 2 tubes polyuréthane

KIT TC printhead	Reference
Kit TC 24x24 ISO	06R0024KI
Kit TC 24x35 ISO	06R0035KI
Kit TC 24x48 ISO	06R0048KI
Kit TC 37x37 ISO	06R0037KI

3.5.1: Layout for TC Kit :



4. Type holder

4.1 Characteristics

The type holder is mounted on a dovetail slide rail, with positioning ball. In this way it can be removed without having to use a tool. Generally having a level surface, it can be supplied concave or convex, according to the diagrams below, in 3 formats: 24 x 24 mm, 24 x 35 mm and 24 x 48 mm.

 flat longitudinal grooves n° 1	concave longitudinal grooves n° 3	 convex longitudinale grooves n° 5
flat transverse grooves n° 2	concave transverse grooves n° 4	convexe transverse grooves n° 6

4.2 Mounting the characters

The surface of the type holder is covered with an autoclips base, making it possible to fasten characters, logos and type plates simply by attaching them. The autoclips principle allows text to be changed fast, easily and when required.

5. Inking

5.1 Principle

This is carried out by means of a saturated cartridge, whose characteristics are as follows:

- removable, without using a tool
- contains no liquid ink, allowing mounting in every direction
- rapid drying
- reactivation by adding a volume of regenerant
- available with different qualities of inks.

CM CARTRIDGES

Directions for use

That cartridge is planed to print fast drying inks on porous and non porous substrates with a pneumatic coder.

As new, it must be stored top above in a cool place between 5 and 30°C.

Instructions for use :

Immediately after opening, place the cartridge on the coder. If you wait to long, the ink would start its evaporation.
Check that the compressed air is arriving on the coder and that the character holder is in its idle position to be in contact with the surface of the cartridge to avoid the ink evaporation.

Maintenance of CM cartridge:

a) For long stops, withdraw the cartridge from its holder and screw cautiously the cover.
It has to be stored up side down.

b) If the cartridge does not ink any more the characters, it can be reactivated with our regenerator. For the equivalent of the bottle half screw cap onto the fiber.
The regenerator 1473 is compatible with the cartridges CM 700, CM 207, CM 300, CM 4399 and CM 500.

6. Control boxes

6.1 Principle

They have all been designed to operate pneumatically and they require the use of oil-filtered, dry and dust-free compressed air.

For triggering, they receive a pneumatic or electrical instruction.

Boxes T201 and T202 allow rates of up to 1 stroke/second (no adjustment possible).

Boxes CBM401 and CBM402 allow rates of up to 1 stroke/second. They control successively a device for stopping the item and the printing head.

Boxes T201 and T202 are the simplest of the series and no adjustment is possible.

6.2 Choice of trigger

The trigger detects the presence of the item to be printed; it is linked electrically or pneumatically to the control box. It is mounted on the packaging line.

Its choice depends on the type of reader envisaged:

- by capturing information on the conveyor,
- on the item to be printed, taking into account its weight, fragility and alignment.

- **pneumatic triggers**
  - with roller sensitive at 2.3 to 4.5 kg of thrust
  - with rod sensitive at 100 g of thrust
  - with pedal
  - with rod sensitive at 7 g of thrust
  - with ball sensitive at 7 g of thrust

  } adapted to units T.C./T201 and T.C./CBM401

- **electric triggers**
  - photoelectric cell
  - electric pedal
  - hard contact
  - PLC

  } Adapted to units T.C./T202 and T.C./CBM402

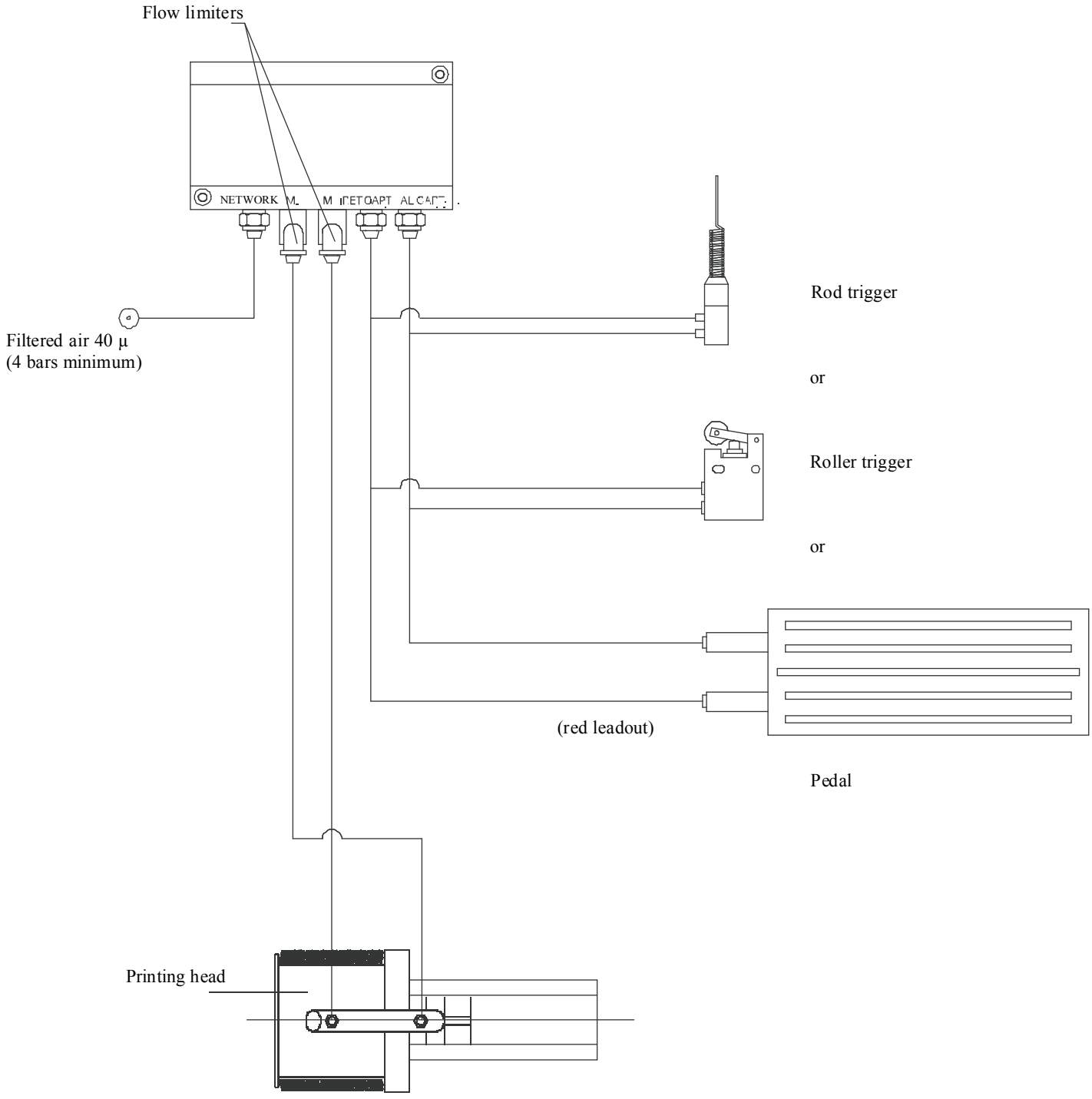
6.3 Wiring, operation and adjustment of the boxes

BoxesT201/T202

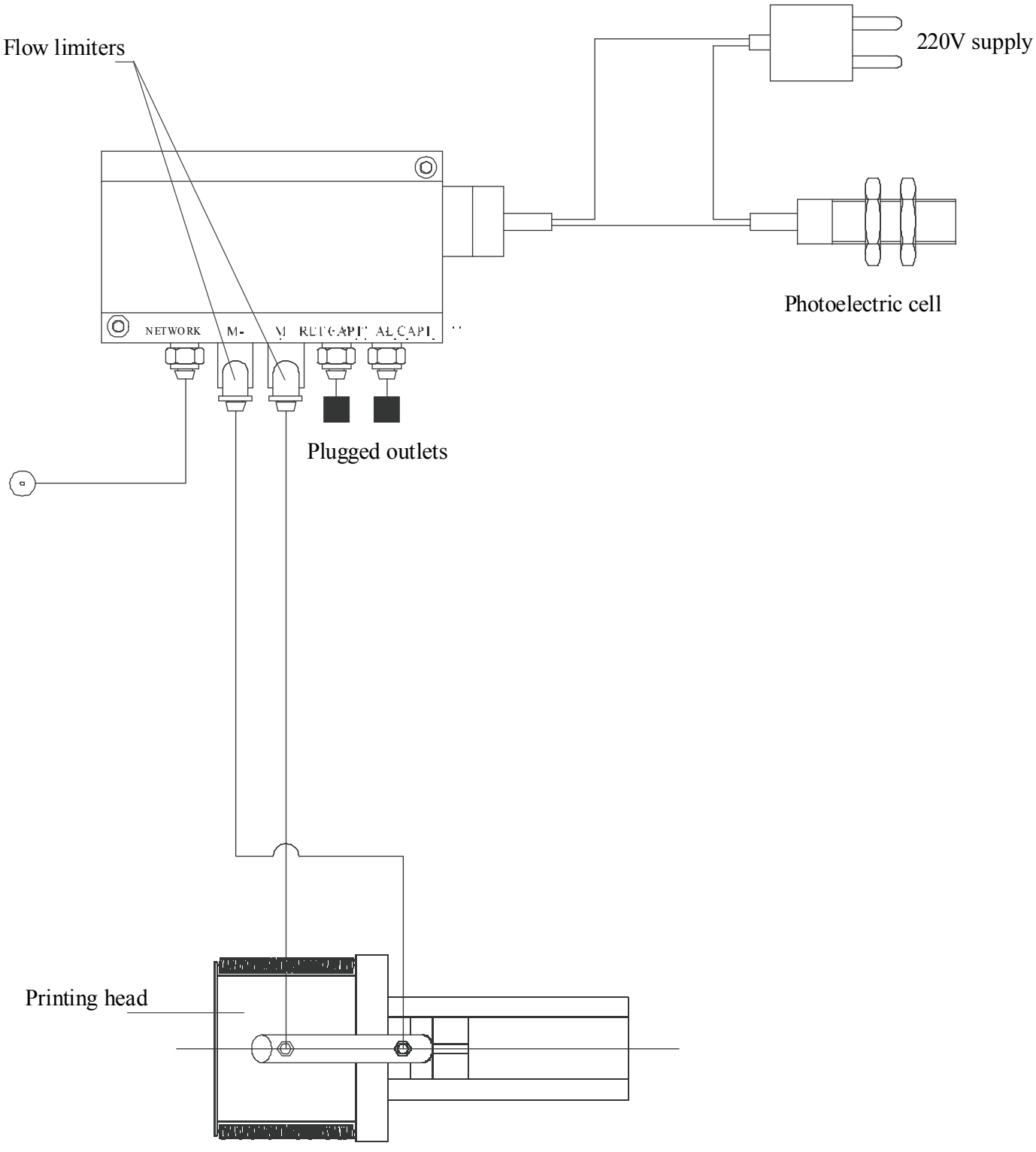
- Carry out the wiring (see diagram).
- Actuate the rod trigger or any other trigger (idem photoelectric box CT202), to check that the head performs its full movement.
- Carry out a printing test. The contact of the characters on the surface to be printed should occur with a light, though sufficiently rapid, “touch”.
- If necessary, using the flow limiters situated on the control box, slow the outward and inward travel of the printing head.

N.B.: The interval timer of the cycle time of the head is set at the factory.

T201 BOX WIRING



T201 BOX WIRING



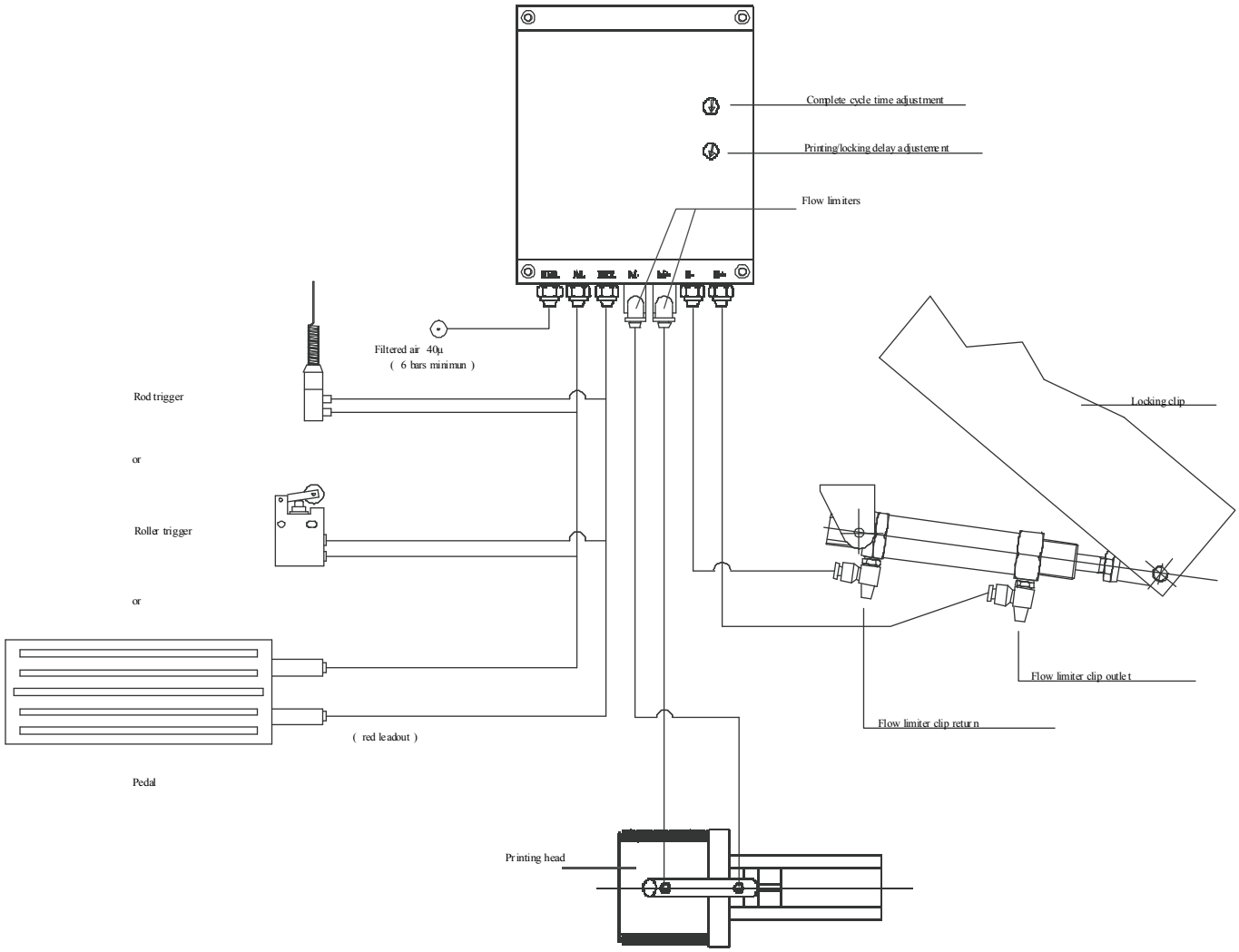
Boxes CBM401/CBM402

- Perform the wiring (see diagram).
- Actuate the rod trigger or any other trigger, to check that the head performs its full movement and that the locking clip is operating.

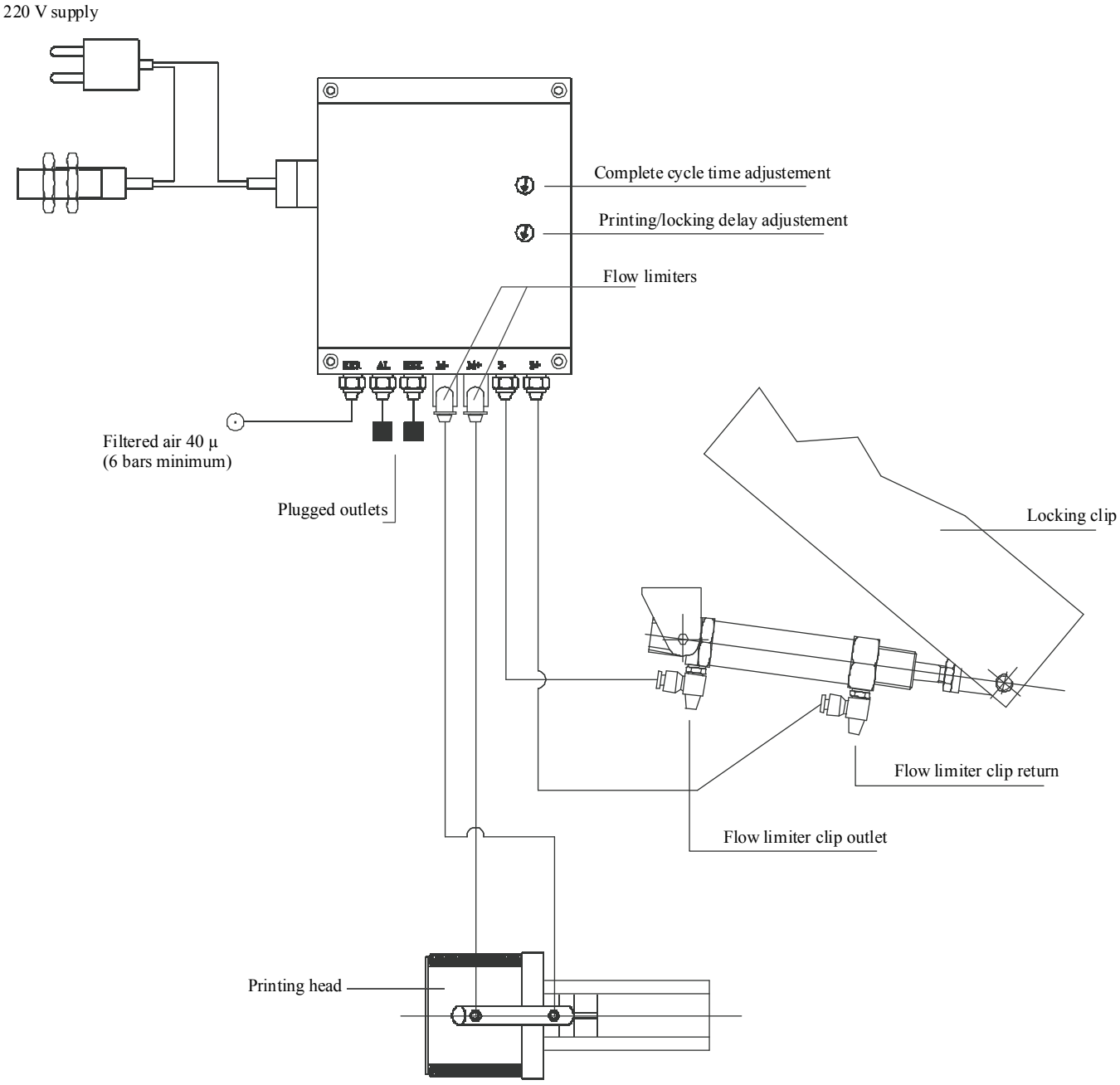
N.B.: As the boxes are pre-set at the factory, it is necessary to check that locking occurs prior to printing.

- Carry out a printing test. The contact of the characters on the surface to be printed should occur with a light, though sufficiently rapid, “touch”.
- If necessary, using the flow limiters situated on the control box, slow the outward and inward travel of the printing head.
- 2 adjustments are possible on the control box:
  1) printing / locking delay
  2) duration of the complete cycle time.

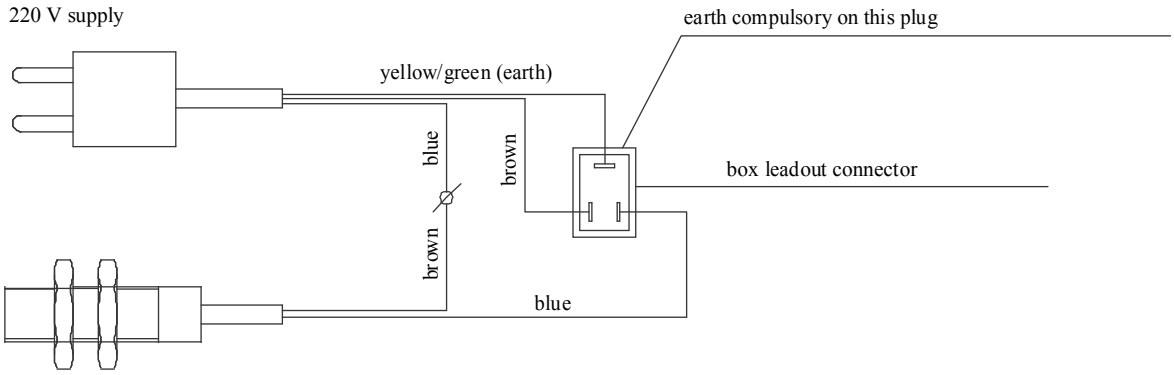
CBM401 BOX WIRING



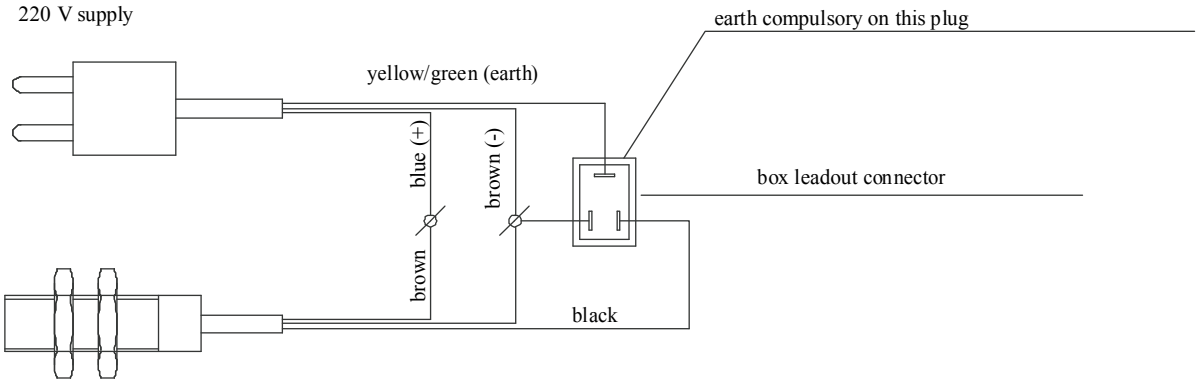
CBM402 BOX WIRING



PHOTOELECTRIC CELL WIRING
T202-CBM402 BOXES

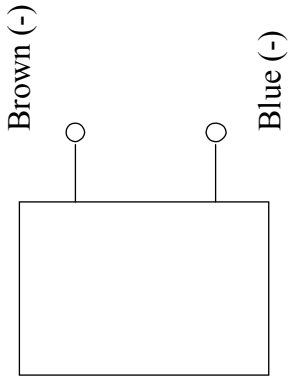


AC 24 V and 220 V photoelectric cell



DC 24 V photoelectric cell

XRCC1C
LIMIT STOP DETECTORS WIRING

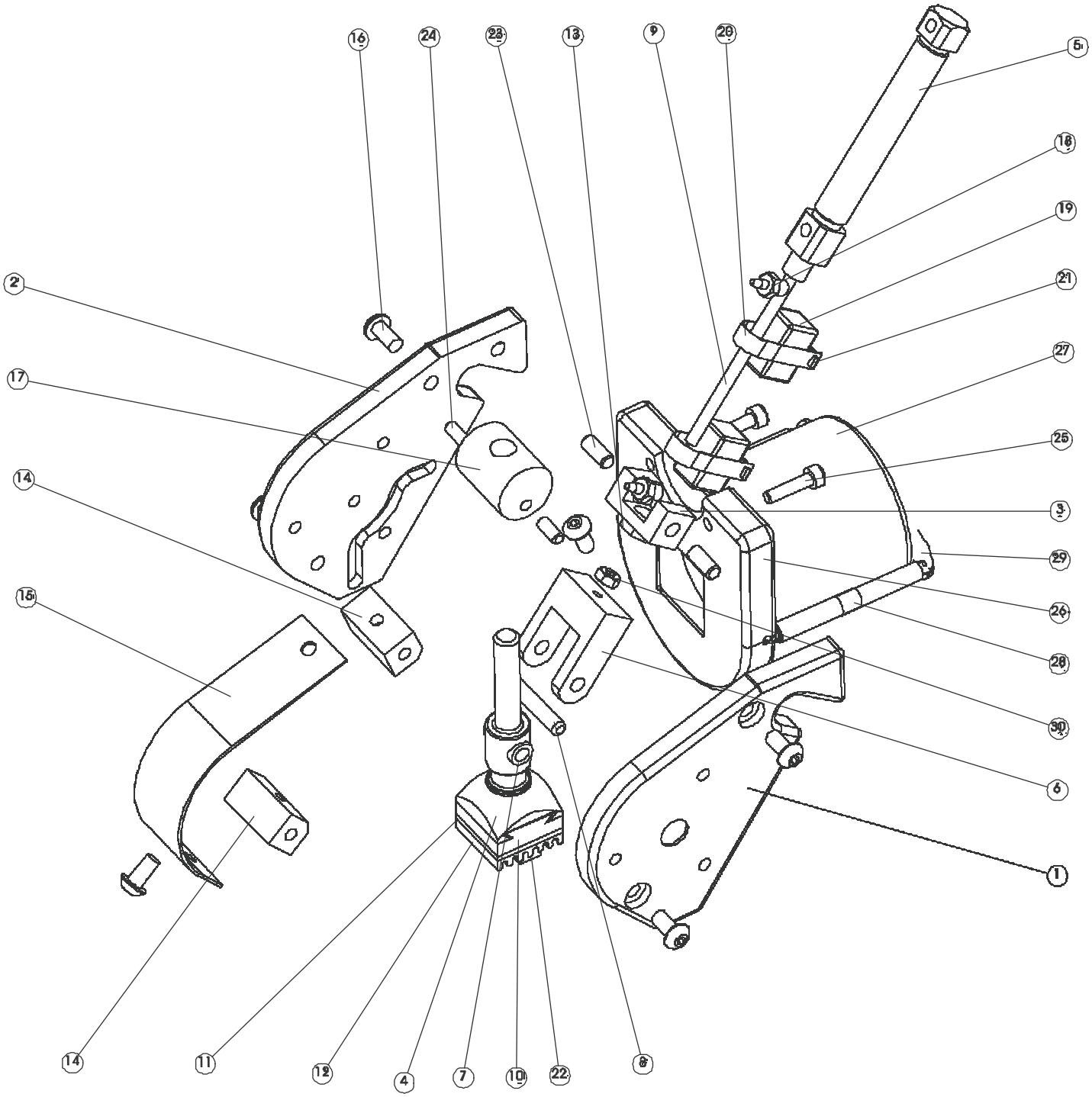


Electricity type	**Continous**
Voltage (volts)	**75 maxi**
Max electric current (mA)	**180**
Réaction Time (ms)	**1.8**

7. Main list of spare parts

	Item n°	Quantity	Article code to be specified with the order
PARTS			**T.C. PRINTER**
Right-hand basic cheek	1	1	06RP01
Left-hand basic cheek	2	1	06RP02
Jack housing	3	1	06RP03
Type holder	4	1	06RP04
Jack	5	1	06RP55
Pivot bloc	6	1	06RP06
Bearing	7	1	06RP07
Type holder pin 5 x 32	8	1	06RP08
Type holder	9	1	Sold with item 5
Foam	10	1	See price list (per cm²)
Grooved base 24 x 24, 24 x 35 , 24 x 48 or 37 x 37	11	1	See price list (per cm²)
Spacer	12	2	06RP14
Steel plate	13	1	06RP15
Round head screw 5 x 10	14	6	06RP16
Type holder pin 2	15	1	06RP17
Barbed nipple M5	16	2	06RP19
Detector M/50/LSU/2V + Gripping yoke	17 + 18	1+1	06RP20
Pin 5 x 12	20	2	06RP25
Pin 4 x 10	21	2	06RP27
Screw CHC M4 x 16	22	2	06RP28
Cartridge bracket 24 x 24	23	1	06RP2924
Cartridge bracket 24 x 35	23	1	06RP2935
Cartridge bracket 37 x 37	23	1	06RP2937
Cartridge bracket 24 x 48	23	1	06RP2948
Cartridge 24 x 24, 24 x 35 , 24 x 48 or 37x 37	24	1	See price list
Rear plate 24 x 24, 24 x 35 , 24 x 48	25	1	06RP31
Rear plate 24 x 24, 24 x 35 , 24 x 48	25	1	06RP31
Spring	26	2	06RP32

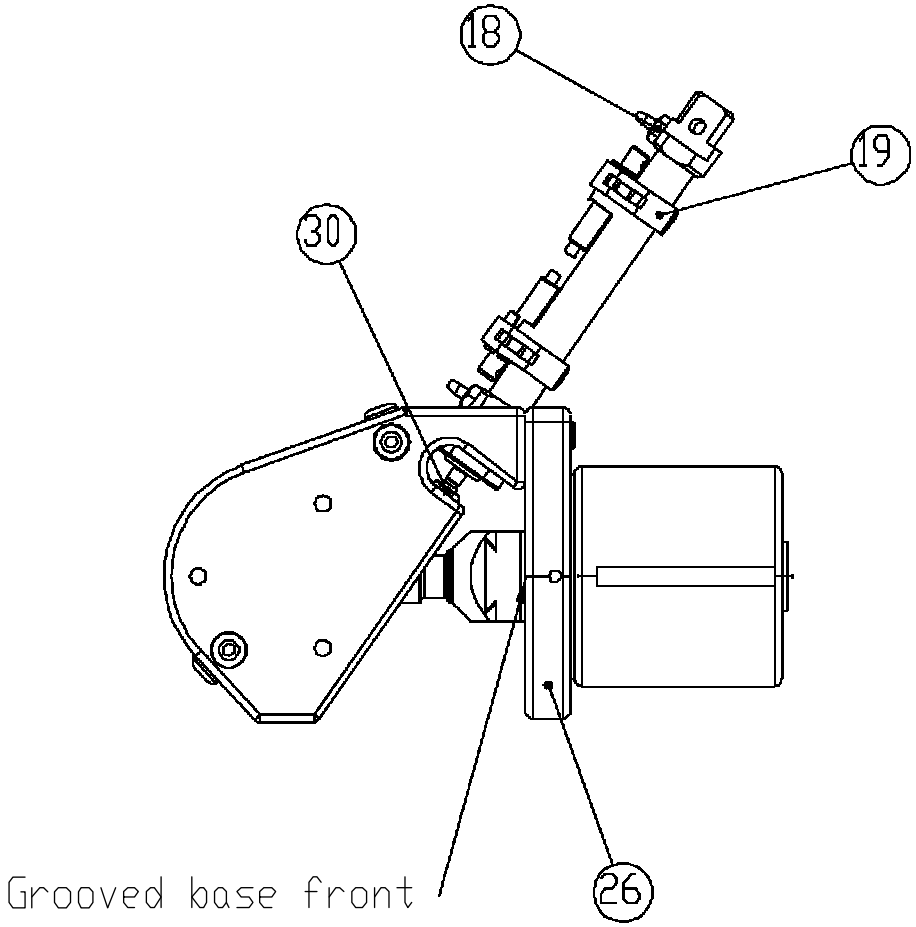
7.1 Exploded view of T.C. head



8. Replacing the jack

- Cut off the air inlet.
- Remove the ink cartridge.
- Disconnect the jack hoses.
- Unscrew the 2 barbed nipples M5, item 18 (to be used again for the new jack).
- Remove the magnetic detector(s) from the jack, item 19 (detection option).
- Unscrew the 2 nuts on the jack and remove the latter.
- Fit the new jack.

N.B.: The fastening of the jack rod onto the cover determines the position of the type holder in its top and bottom position.



Adjustment: In the inking position, screw on or unscrew the jack rod, to bring the front of the grooved base flush with part n° 26 (cartridge bracket) and lock the nut, n° 30.

- Screw back on the 2 barbed nipples M5.
- Reconnect the 2 jack hose.
- Refit the detector(s).
- Refit the ink cartridge.
- Reapply the air pressure in the circuit.

9. Choice of inks

Consult the synoptical table of the characteristics of our inks, as well as the detailed descriptions of each of our inks. These documents appear in our general catalogue.

10. Additional products

10.1 Products for cleaning the equipment

Nettol: liquid cleaner diluting agent supplied in 5-litre tins. Check the compatibility of this diluting agent with the ink that you use (cf. synoptical table on use of inks).
Aéronet: Aerosol cleaner diluting agent specifically recommended for the characters.
Cellulose wadding: in 800 m length rolls (approx.) and pre-cut into 40 x 30 cm formats, thus simplifying cleaning.

10.2 Hygiene products

High protection cream: supplied in 240 ml aerosol canisters, this protects the hands and forearms from attack by inks and solvents.
Gel soap: supplied in 5-litres tins, this removes traces of ink from the hands, whilst at the same time softening the skin. It is biodegradable. This soap tin comes with a distribution pump and a wall bracket.

11. General conditions of warranty

This **TIFLEX** appliance comes with a full warranty, parts and labour, for a period of six months as from the date of bringing into service.

The contractual warranty covers all manufacturing defects; the following cases are excluded from the warranty:
- use in a manner not suitable for or not in accordance with its purpose
- unsuitable or defective electrical connection
- normal wear
- faulty maintenance
- breakdown due to non-compliance with one of the points of the user manual
- breakdown whose origin is due to an item of equipment not covered by the manual
- repair or attempted repair without the service assistance of **TIFLEX** or without the prior authorisation of **TIFLEX**
- not using **TIFLEX** guaranteed genuine spare parts**.**

The warranty is executed following prior agreement, at the client's premises (by our good offices or by the latter, as appropriate) and it is understood as being the replacement of defective parts. Postage and packing are payable by the client.

Under no circumstances may the application of the contractual warranty give rise to compensation for direct or indirect losses.